10-642947 Page 2

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 22 NOV 2004 HIGHEST RN 786612-66-6 DICTIONARY FILE UPDATES: 22 NOV 2004 HIGHEST RN 786612-66-6

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at: http://www.cas.org/ONLINE/DBSS/registryss.html

=>
Uploading C:\STNEXP4\QUERIES\10-642947z.str

O
G1
OH
OH
14

chain nodes : 10 12 14 ring nodes : 1 2 3 4 5 6 7 8 9 chain bonds : 2-10 8-12 9-14 ring bonds : 3-4 4-5 5-6 5-7 6-9 7-8 8-9 1-2 1-6 2-3 exact/norm bonds : 8-12 9-14 exact bonds : 2-10 5-7 6-9 7-8 8-9 normalized bonds : 1-2 1-6 2-3 3-4 4-5 5-6 isolated ring systems : containing 1 :

G1:H,C

L1

Match level:
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:CLASS
12:CLASS 14:CLASS

STRUCTURE UPLOADED

10-642947 Page 3

=> d L1 HAS NO ANSWERS L1 STR

NO₂ OH

G1 H,C

Structure attributes must be viewed using STN Express query preparation.

=> s 11 ful FULL SEARCH INITIATED 13:37:22 FILE 'REGISTRY' FULL SCREEN SEARCH COMPLETED - 855 TO ITERATE

100.0% PROCESSED 855 ITERATIONS SEARCH TIME: 00.00.01

20 ANSWERS

SEARCH IIME: 00.00.01

L2 20 SEA SSS FUL L1

=> fil caplus
COST IN U.S. DOLLARS

SINCE FILE TOTAL ENTRY SESSION 155.42 155.63

FULL ESTIMATED COST

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FILE COVERS 1907 - 23 Nov 2004 VOL 141 ISS 22 FILE LAST UPDATED: 22 Nov 2004 (20041122/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s 12

L3 7 L2

L3 ANSWER 1 OF 7
ACCESSION NUMBER:
DOCUMENT NUMBER:
10:1112:
110:181316
Process for the preparation of 5-nitrobenzofurans by dehydration of 5-nitrobenzofurans by dehydration of 5-nitro-2,3-dihydrobenzofuran-3-ols in the presence of protic acids or hydroxides

Magerlein, Wolfgang
Germany
U.S. Pat. Appl. Publ., 11 pp.
CODEN: USXXCO
DOCUMENT TYPE:
LANGUAGE:
Patent
English
English
English

DOCUMENT TYPE: LANGUAGE: FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

	PATENT NO.						D	DATE			APPLICATION NO.					DATE			
							_									-			
	US	2004	0342	20		Al		2004	0219	1	US .	2003-	6429	47		2	0030	818	
	DE	1023	7819	•		A1		2004	0304		DE .	2002-	1023	7819		2	0020	819	
	EP	1394	155			A2		2004	0303		EP.	2003-	1781	1		2	0030	805	
	ΕP	1394	155			A3		2004	0324										
		R:	AT,	BE,	CH,	DE,	DK,	ES,	FR,	GB,	GR	, IT,	LI,	LU,	NL,	SE,	MC,	PT,	
			İE,	SI,	LT,	LV,	FI,	RO,	MK,	CY,	AL	, TR,	BG,	CZ,	EE,	ΗU,	SK		
	CN	1485	323			A		2004	0331		CN.	2003-	1548	03		2	0030	819	
IOI	RITY	APP	LN.	INFO	. :						DE .	2002-	1023	7819		A 2	0020	819	

OTHER SOURCE(S): MARPAT 140:181316

The invention relates to a process for preparation 5-nitrobenzofurans ${\bf I}$ dehydration of 5-nitro-2,3-dihydrobenzofuran-3-ols II in the presence of protic acids or hydroxides (wherein RI = H, alkyl; R2 = independently F, Cl. br, I, alkyl, OH and derivs., NH2 and derivs., CONH2 and derivs., in = 0-3; or when m= 2, 3 it is possible that RZCCR2 = (un)substituted ring; with the proviso of 2-(n-butyl)-5-nitrobenzofuran be excluded) were prepared

ared as new active compds. for treating cardiac arrhythmias. The advantages include low-cost, stable and easily obtainable precursors, higher product yields, and minimization of waste. For example, 2 (-n-butyl)-5-nitrobenzofuran was prepared, in 80% yield, by dehydration of 2-(n-butyl)-5-nitro-2,3-dihydrobenzofuran-3-ol (III) in EtOH in the presence of concentrated H2SO4 at reflux for 4 h. III was prepared in 6 s by O-alkylation of Me salicylate with methyl-2-bromohexanoate,

L3 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2004 ACS ON STN
ACCESSION NUMBER: 1992:448242 CAPLUS
DOCUMENT NUMBER: 117:48242

Benzofuran derivatives. Part 4. Synthesis of
benzofurans and 2,3,4,5-tetrahydro-1-benzoxepin-3,5diones
AUTHOR(S): Suzuki, Tsuneo; Tanemura, Kiyoshi; Horaguchi,
Takaaki:

Shimizu, Takahachi: Sakakibara, Tohru Sch. Den. Niigata, Nippon Dent. Univ., Hamaura, 951, Japan Journal of Heterocyclic Chemistry (1992), 29(2), CORPORATE SOURCE:

CODEN: JHTCAD; ISSN: 0022-152X Journal English

DOCUMENT TYPE: LANGUAGE: GI

By treatment of Et 4- or 5-substituted 2-acetylphenoxyacetates I (R By treatment of Et 4- or 5-substituted 2-acetylphenoxyacetates I (R = 4-Me, R, 5-Cl, etc.) with potassium hydroxide in dry dioxane, benzofurans II-VII and 2,3,4,5-tetrahydro-1-benzoxepin-3,5-diones VIII were obtained. The relative yields of benzofurans II-VII and 2,3,4,5-tetrahydro-1-benzoxepin-3,5-diones VIII varied with the types of 4- or 5-substituents. The electron-donating 4-methoxy group favored the formation of benzoxepins. On the other hand, electron-withdrawing substituents such

the 4-nitro group favored the formation of benzofurans. When esters I were treated with sodium amide, 2,3-dihydrobenzofurans II were obtained exclusively regardless of 4- or 5-substituents.

ANSWER 1 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)
NAON-hydrolysia, cyclizing decarboxylation of 2-(1-carboxypentoxy)benzoic
acid, HC1-hydrolysis, nitration in the presence of HNO3/HZSO4, and redn.
with NABH4 in ethanol.
658053-39-59, 2-(n-Butyl)-5-nitro-2,3-dihydrobenzofuran-3-ol
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(intermediate; process for preparation of 5-nitrobenzofurans by
ditation

iration
 of 5-nitro-2,3-dihydrobenzofuran-3-ols in the presence of protic acids
 or hydroxides)
 658053-39-5 CAPIUS
3-Benzofuranol, 2-butyl-2,3-dihydro-5-nitro- (9CI) (CA INDEX NAME)

$$O_2N \longrightarrow OH \\ Bu-r$$

ANSWER 2 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)
104862-17-1P 104862-21-7P 104862-25-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
104862-17-1 CAPLUS
2-Benzofturancarboxylic acid, 2,3-dihydro-3-hydroxy-3-methyl-5-nitro-,
ethyl ester, cis- (9CI) (CA INDEX NAME)

104862-21-7 CAPLUS 2-Benzofurancarhoxylic acid, 2,3-dihydro-3-hydroxy-3-methyl-5-nitro-, ethyl ester, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.

104862-25-1 CAPLUS
2-Benzofurancarboxylic acid, 2,3-dihydro-3-hydroxy-3-methyl-5-nitro-, cis-(9CI) (CA INDEX NAME)

Relative stereochemistry.

ACCESSION NUMBER: DOCUMENT NUMBER: TITLE:

ANSWER 3 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN
SSION NUMBER: 1989:94892 CAPLUS
MENT NUMBER: 110:94892
E: The cyclization reaction of methyl
2-acyl-4-nitrophenoxyacetates with potassium

hydroxide AUTHOR(S): CORPORATE SOURCE: SOURCE:

Suzuki, Tsuneo Sch. Dent., Nippon Dent. Univ., Niigata, 951, Japan Nippon Shika Daigaku Kiyo, Ippan Kyoiku-kei (1988), 17, 111-18 CODEN: NSDKDD; ISSN: 0385-1605 Journal English

DOCUMENT TYPE: LANGUAGE: GI

02N

III

Cyclization of nitrophenoxyacetate I (R = H) with KOH in dioxane gave a mixture of cis- and trans-benzofurancarboxylates II (R = H) and III,

Similar cyclization of I (R = Me, Et, CHMe2) gave only cis products II (R = Me, Et, CHMe2).

104862-29-5 104862-30-8 119197-68-1
119197-69-2 119197-70-5 119197-71-6
RL: RCT (Reactant): RACT (Reactant or reagent)
(cyclization of, with potassium hydroxide, stereochem. of)
104862-29-5 CAPUS
2-Benzofurancarboxylic acid, 2,3-dihydro-3-hydroxy-3-methyl-5-nitro-,
methyl ester, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.

ANSWER 3 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN

RN 119197-70 CN 2-Benzofurancarboxysscester,
trans- (9CI) (CA INDEX NAME) 119197-70-5 CAPLUS 2-Benzofurancarboxylic acid, 2,3-dihydro-3-hydroxy-5-nitro-, methyl

119197-71-6 CAPLUS
2-Benzofurancarboxylic acid, 2,3-dihydro-3-hydroxy-3-methyl-5-nitro-, methyl ester, trans- (9CI) (CA INDEX NAME)

104862-25-1P 104862-26-2P 119197-72-7P

104862-25-1P 104862-26-1P 104862-26-REPROPERTY (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preparation and esterification of, with diazomethane) 104862-25-1 CAPLUS 2-Benzofurancarboxylic acid, 2,3-dihydro-3-hydroxy-3-methyl-5-nitro-,

(9CI) (CA INDEX NAME)

Relative stereochemistry.

L3 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN

104862-30-8 CAPLUS 2-Benzofurancarboxylic acid, 2,3-dihydro-3-hydroxy-3-(1-methylethyl)-5-nitro-, methyl ester, cis- (9CI) (CA INDEX NAME)

RN 119197-66-. CN 2-Benzofurancarboxyxx-ester, cis- (9CI) (CA INDEX NAME) 119197-68-1 CAPLUS
2-Benzofurancarboxylic acid, 2,3-dihydro-3-hydroxy-5-nitro-, methyl

119197-69-2 CAPLUS
2-Benzofurancarboxylic acid, 3-ethyl-2,3-dihydro-3-hydroxy-5-nitro-, methyl ester, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.

ANSWER 3 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN

104862-26-2 CAPLUS 2-Benzofurancarboxylic acid, 2,3-dihydro-3-hydroxy-3-(1-methylethyl)-5-nitro-, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.

119197-72-7 CAPLUS 2-Benzofurancarboxylic acid, 3-ethyl-2,3-dihydro-3-hydroxy-5-nitro-, cis-(9C1) (CA INDEX NAME)

Relative stereochemistry.

L3 ANSWER 4 OF 7
ACCESSION NUMBER:
DOCUMENT NUMBER:
1988:75142 CAPLUS
108:75142 CAPLUS
108:

SOURCE: 965-9

CODEN: JHTCAD; ISSN: 0022-152X DOCUMENT TYPE:

Journal

OTHER SOURCE(S):

English CASREACT 108:75142

3-Methyl-5-nitrobenzofuran (I, R = H) and 3-methyl-5-nitrobenzofuran-2-carboxylic acid (I, R = CO2H) were obtained by heating 2,4-ac.(NO2)C6H30CH2CO2H with various bases in Ac2O. It appeared that 3-hydroxy-3-methyl-5-nitro-z,3-dihydrobenzofuran-2-carboxylic acid (II) was the intermediate in the benzofuran synthesis. The properties of II were examined under various conditions. Using strong bases such as Et3N

place of NaOAc, I(R = CO2H) was obtained exclusively. However, in the presence of NaOAc, I (R = H) was obtained in good yield. The reaction pathways for the formation of I (R = H, CO2H) are discussed.

104862-25-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation, decarboxylation, and dehydration of)
104862-25-1 CAPLUS
2-Benzofurancarboxylic acid, 2,3-dihydro-3-hydroxy-3-methyl-5-nitro-,

(9CI) (CA INDEX NAME

Relative stereochemistry

L3 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2004 ACS ON STN ACCESSION NUMBER: 1986:590808 CAPLUS DOCUMENT NUMBER: 105:190808 Benzofuran deritation

105:190808
Benzofuran derivatives. II. Synthesis of 2,3-dihydrobenzofurans from ethyl 2-acylphenoxyacetates
Suzukl, Tsuneo
Nippon Dent. Univ. Niigata, Niigata, 951, Japan
Bulletin of the Chemical Society of Japan (1985), 58(10), 2821-5
CODEN: BCSJAB; ISSN: 0009-2673
JOURNAL ERGADAR ISSN: 0009-2673
CASREACT 105:190808 AUTHOR(S): CORPORATE SOURCE: SOURCE:

DOCUMENT TYPE:

LANGUAGE: OTHER SOURCE(S): GI

OCH2CO2Et TTT

Benzofurancarboxylates I and II (R = H, Et; R1 = H, Me, Et, CHMe2) were obtained from the reaction of Et (2-acyl-4-nitrophenoxy) acetates III with KOH in dry dioxane. The relative ratios of the cis and trans isomers

With
respect to C-2 and C-3 stereochem. Varied according to the structure of
the acyl group. When the acyl group was acetyl, proplonyl, or isobutyryl
group, the cis isomers were exclusively obtained in high yields. On the
other hand, a near equimol, amount of the cis and trans isomers was
obtained
from the reaction of 2-formyl derivs, under the same conditions.

IT 104862-17-1P 104862-21-7P
RI: RCT (Reactant): SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(preparation and reaction of, with potassium hydroxide)
RN 104862-17-1 CAPLUS
CN 2-Benzofurancarboxylic acid, 2,3-dihydro-3-hydroxy-3-methyl-5-nitro-,
ethyl ester, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.

ANSWER 4 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)
104862-17-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation, appointication, acylation, and dehydration of)
104862-17-1 CAPLUS
2-Benzofurancarboxylic acid, 2,3-dihydro-3-hydroxy-3-methyl-5-nitro-,
ethyl ester, cis- (9CI) (CA INDEX NAME)

ANSWER 5 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)
104862-21-7 CAPLUS
2-Benzofutancarboxylic acid, 2,3-dihydro-3-hydroxy-3-methyl-5-nitro-,
ethyl ester, trans (9CI) (CA INDEX NAME)

ΙT

104862-16-0P 104862-18-2P 104862-19-3P 104862-20-6P 104862-25-1P 104862-26-2P 104862-25-1P 104862-26-2P 104862-25-9 104862-25-0-8P RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of) 104862-16-0 CAPLUS 2-Renzofurancarboxylic acid, 2,3-dihydro-3-hydroxy-5-nitro-, ethyl ester, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.

104862-18-2 CAPLUS 2-Benzofurancarboxylic acid, 3-ethyl-2,3-dihydro-3-hydroxy-5-nitro-, ester, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry

104862-19-3 CAPLUS 2-Benzofurancarboxylic acid, 2,3-dihydro-3-hydroxy-3-(1-methylethyl)-5-nitro-, ethyl ester, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.

ANSWER 5 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

104862-20-6 CAPLUS 2-Benzofuranaczartosylic acid, 2,3-dihydro-3-hydroxy-5-nitro-, ethyl ester, trans- (9C1) (CA INDEX NAME)

Relative stereochemistry.

104862-25-1 CAPLUS 2-Benzofurancarboxylic acid, 2,3-dihydro-3-hydroxy-3-methyl-5-nitro-,

(9CI) (CA INDEX NAME)

104862-26-2 CAPLUS 2-Benzofurancarboxylic acid, 2,3-dihydro-3-hydroxy-3-(1-methylethyl)-5-nitro-, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.

104862-29-5 CAPLUS

L3 ANSWER 6 OF 7
ACCESSION NUMBER:
DOCUMENT NUMBER:
1986:552861 CAPLUS
105:152861 CA

DOCUMENT TYPE: LANGUAGE: OTHER SOURCE(S): GI

Ten nitrobenzofurans I (R = H, MeO, Br, NO2, MeCO, CO2Me, cyano; R1 = H, MeO; R2 = H, MeO, Br) were prepared in 2 steps by treating hydroxyhenzaldehydes II with BrCEIVBO2 and K2CO3 in MeZCO to give 48-978 hydroxynitrodihydrobenzofurans III which were dehydrated in refluxing

Relative stereochemistry.

104412-95-5 CAPLUS
3-Benzofuranol, 2,3-dihydro-2,5-dinitro-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.

ANSWER 5 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN (Continued) 2-Benzofurancarboxylic acid, 2,3-dihydro-3-hydroxy-3-methyl-5-nitro-, methyl ester, cis- {9CI} (CA INDEX NAME)

Relative stereochemistry.

104862-30-8 CAPLUS 2-Benzofurancetoxylic acid, 2,3-dihydro-3-hydroxy-3-(1-methylethyl)-5-nitro-, methyl ester, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.

ANSWER 6 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN

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L3 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:
1967:411444 CAPLUS
TITLE:
AUTHOR(5):
Hill, John: Ramage, George R.
CORPORATE SOURCE:
Univ. Salford, Salford, UK
Journal of the Chemical Society [Section] C: Organic
(1967), (8), 783-4
CODEN: JSOOOX: ISSN: 0022-4952
JOURNAL AUTHOR
OTHER SOURCE(5):
CARREAGT 67:11444
GI For diagram(s), see printed CA Issue.
AB Syntheses of 7-accetyl-3, 4-dihydro-3, 6-dimethyl-2H-benzofurano-[6, 5-b][1, 4]oxazine [1] and related compds. are described.

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 14742-06-4 CAPLUS
CN 2-Prepanone, 1-1(2-acetyl-2,3-dihydro-3-hydroxy-3-methyl-5-nitro-6-benzofuranyl)oxyl- (8CI) (CA INDEX NAME)
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